

Claims

- [c1] A surgical device having a sheath with an interior passage, legs that project from the passage of the sheath, and actuating means for deploying the legs from the sheath and for retracting the legs into the sheath, the legs moving outwardly away from each other when deployed from the sheath by the actuating means to establish a deployed position, the legs moving inwardly toward each other when retracted into the sheath by the actuating means, at least one of the legs having a transverse cross-sectional shape defined by a first surface that is concave and an oppositely-disposed second surface that is convex.
- [c2] The surgical device according to claim 1, wherein as a result of their cross-sectional shape, the legs automatically move radially outward and away from each other when deployed outside the sheath with the actuating means without the assistance of a second component to engage and force the legs away from each other.
- [c3] The surgical device according to claim 1, wherein the legs have adjacent distal ends that are connected together so that the legs define a basket in the deployed

position and the basket collapses as the legs are retracted into the sheath by the actuating means so as to define a grasping position in which the legs are operable to perform a grasping operation.

- [c4] The surgical device according to claim 3, wherein the legs have a longitudinal shape so that the basket is helical in shape.
- [c5] The surgical device according to claim 1, wherein the legs are capable of being retracted into the sheath with the actuating means to define a stowed position in which the legs are substantially parallel to each other.
- [c6] The surgical device according to claim 5, wherein when in the stowed position the legs define a tubular shape having a circular opening defined by the first surfaces of the legs and a circular exterior cross-section defined by the second surfaces of the legs.
- [c7] The surgical device according to claim 1, wherein each of the legs has the cross-sectional shape.
- [c8] The surgical device according to claim 1, wherein the device has two of the legs and the first surfaces of the two legs face each other.
- [c9] The surgical device according to claim 1, wherein the

device has more than two of the legs and the first surfaces of the legs face each other.

- [c10] The surgical device according to claim 1, wherein the device is a surgical instrument chosen from the group consisting of urological, gynecological, cardiological, laparoscopical and gastro-intestinal instruments.
- [c11] A surgical extraction device having a sheath with an interior passage, at least three legs that project from the passage of the sheath, and actuating means for deploying the legs from the sheath and for retracting the legs into the sheath, each of the legs comprising:
 - a transverse cross-sectional shape defined by a concave surface, a convex surface oppositely disposed from the concave surface, and lateral surfaces oppositely disposed from each other; and
 - a distal end;wherein the concave surfaces of the legs face each other, the distal ends of the legs are connected together, the legs move outwardly away from each other when deployed from the sheath by the actuating means to establish a deployed position in which the legs define an expanded basket, and the legs are forced to move inwardly toward each other when retracted into the sheath by the actuating means to establish a grasping position in which the legs define a collapsed basket and cooperate

to perform a grasping operation.

- [c12] The surgical extraction device according to claim 11, wherein as a result of their cross-sectional shape the legs automatically deploy radially outward and away from each other when deployed outside the sheath with the actuating means without the assistance of a second component to engage and force the legs away from each other.
- [c13] The surgical extraction device according to claim 11, wherein the legs are capable of being retracted into the sheath with the actuating means to define a stowed position in which the legs are substantially parallel to each other.
- [c14] The surgical extraction device according to claim 13, wherein when in the stowed position the legs define a tubular shape having a circular exterior cross-section defined by the convex surfaces of the legs and a circular opening defined by the concave surfaces of the legs.
- [c15] The surgical extraction device according to claim 11, wherein the legs have a longitudinal shape so that the expanded basket is helical in shape.
- [c16] The surgical extraction device according to claim 11, wherein the device is a urological instrument.

- [c17] The surgical extraction device according to claim 11, wherein the device is a gynecological instrument.
- [c18] The surgical extraction device according to claim 11, wherein the device is a cardiological instrument.
- [c19] The surgical extraction device according to claim 11, wherein the device is a laparoscopical instrument.
- [c20] The surgical extraction device according to claim 11, wherein the device is a gastro-intestinal instrument.